

Recurrent pneumothorax following abdominal paracentesis

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Summary: A 62 year old man presented with abdominal ascites, without pleural effusion, due to peritoneal mesothelioma. He had chronic obstructive airways disease and a past history of right upper lobectomy for tuberculosis. On two occasions abdominal paracentesis was followed within 72 hours by pneumothorax.

This previously unreported complication of abdominal paracentesis may be due to increased diaphragmatic excursion following the procedure and should be considered in patients with preexisting lung disease.

Introduction

Abdominal paracentesis is a widely used palliative therapy for malignant ascites and is generally accepted as a procedure with few adverse effects: pneumothorax is not a recognized complication. I report a patient with recurrent pneumothorax apparently precipitated by abdominal paracentesis.

Case report

A 62 year old civil servant presented with a 6-week history of worsening abdominal distension. He had a past medical history of chronic obstructive airways disease, ischaemic heart disease and right upper lobectomy for tuberculosis. There was no past history of pneumothorax. He had smoked 20 cigarettes/day until 15 months prior to admission and now smoked a pipe. There was no history of exposure to asbestos.

Physical examination revealed evidence of a previous right upper lobectomy, widespread expiratory polyphonic wheezes but no crackles. There were no abdominal masses but there was evidence of gross ascites with shifting dullness and a fluid thrill. Routine biochemistry and haematology were normal apart from a serum albumin of 33 g/l. The chest X-ray showed a previous right upper lobectomy and a small right diaphragmatic pleural plaque. There were no pleural effusions.

Abdominal paracentesis was performed via the

right iliac fossa. Approximately 4 litres of turbid fluid was drained over 72 hours. The protein concentration was 46 g/l and microbiology and cytology were not diagnostic. Laparoscopy revealed matted loops of bowel with widespread peritoneal seedlings. Histological examination of these lesions showed malignant mesothelioma of the epithelioid type.

The patient suffered a left pneumothorax within 48 hours of paracentesis (before laparoscopy). This was treated with intercostal underwater drainage but recurred on two attempts to remove the drain, necessitating tetracycline pleuradesis. Paracentesis was repeated one month later and again a left sided pneumothorax occurred, this time within 72 hours. This was treated unsuccessfully with a second tetracycline pleuradesis; a pleuradesis with talc suspension was therefore performed. Since this procedure no further pneumothoraces have occurred despite 2 more paracenteses and the patient is currently responding to modified carboplatin chemotherapy.¹

Discussion

Spontaneous pneumothorax may complicate many lung diseases, including emphysema, fibrotic tuberculosis, and fibrotic lung diseases, such as asbestosis, all of which could be present in the case reported. It has also been described as a rare complication of primary and secondary lung neoplasms, although these are usually intrapulmonary, cavitating lesions.² Pleural mesothelioma may be a cause of spontaneous pneumothorax³ and spontaneous detachment of benign pleural mesothelioma has been reported, although it is unclear if

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the pneumothorax that resulted was due to this detachment or to the transbronchial biopsy being performed at the time.⁴

Pleural effusions due to ascites with diaphragmatic defects are well recognized.^{5,6} They are usually described in association with hepatic cirrhosis and are almost always right sided.⁷ There have also been reports of pneumothorax as a result of massive pneumoperitoneum in association with similar defects⁸ or following traumatic oesophageal rupture.⁹

No radiological evidence of intrapulmonary neoplasia or pleural spread of mesothelioma was apparent in the patient described here although spontaneous pneumothorax may occur before metastases become evident on chest X-ray.² It would be surprising if pneumothorax in our case was due to pneumoperitoneum with diaphragmatic communication since, despite the presence of mas-

sive ascites on admission, there was no evidence of any pleural effusion. Moreover the pneumothoraces were both left sided, no pleural effusion developed following the first pneumothorax despite reaccumulation of ascites, and no evidence of significant pneumoperitoneum was evident on radiographs at any time.

Abdominal paracentesis may cause a pneumothorax by increasing excursion of previously splinted diaphragms, thereby increasing the chance of rupture of a diaphragmatic adhesion or bulla. This complication should be considered when paracentesis is performed, especially in patients with preexisting pulmonary disease.

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